



**DEPARTMENT OF TRANSPORTATION**

**[4910-22-P]**

**Federal Highway Administration**

**23 CFR Part 924**

**[Docket No. FHWA-2013-0019]**

**RIN 2125-AF56**

**Highway Safety Improvement Program**

**AGENCY:** Federal Highway Administration (FHWA), DOT.

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** The purpose of this notice of proposed rulemaking (NPRM) is to propose changes to Highway Safety Improvement Program (HSIP) regulations to address provisions in the Moving Ahead for Progress in the 21st Century Act (MAP-21) as well as to incorporate clarifications to better explain existing regulatory language.

Specifically, this rule proposes to amend DOT's regulations to address MAP-21 provisions that removed the requirement for States to prepare a Transparency Report, removed the High Risk Rural Roads set-aside, and removed the 10 percent flexibility provision for States to use safety funding in accordance with federal law. This rule also proposes to amend DOT's regulations to address a MAP-21 provision that requires DOT to establish a subset of roadway data elements that are useful to the inventory of roadway safety, and to ensure that States adopt and use the subset. Finally, this rule proposes to address MAP-21 provisions that add State Strategic Highway Safety Plan update requirements and require States to develop HSIP performance targets.

The proposed changes are intended to clarify the regulation for the development, implementation, and evaluation of highway safety improvement programs that are administered in each State.

**DATES:** Comments must be received on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** Mail or hand deliver comments to the U.S. Department of Transportation, Dockets Management Facility, 1200 New Jersey Avenue, SE., Washington, DC 20590, or submit electronically at <http://www.regulations.gov>. All comments should include the docket number that appears in the heading of this document. All comments received will be available for examination and copying at the above address from 9 a.m. to 5 p.m., e.t., Monday through Friday, except Federal holidays. Those desiring notification of receipt of comments must include a self-addressed, stamped postcard or may print the acknowledgment page that appears after submitting comments electronically. Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (Volume 65, Number 70, Pages 19477-78) or you may visit <http://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:** Ms. Karen Scurry, Office of Safety, [karen.scurry@dot.gov](mailto:karen.scurry@dot.gov); or William Winne, Office of the Chief Counsel, [william.winne@dot.gov](mailto:william.winne@dot.gov), Federal Highway Administration, 1200 New Jersey Ave., SE.,

Washington, DC 20590. Office hours are from 8:00 a.m. to 4:30 p.m., e.t., Monday through Friday, except Federal holidays.

## **SUPPLEMENTARY INFORMATION:**

### **Electronic Access and Filing**

You may submit or access all comments received by the DOT online through: <http://www.regulations.gov>. Electronic submission and retrieval help and guidelines are available on the Web site. It is available 24 hours each day, 365 days each year. Please follow the instructions. An electronic copy of this document may also be downloaded from the Federal Register's home page at: <http://www.federalregister.gov>.

## **EXECUTIVE SUMMARY**

### **I. Purpose of the Regulatory Action**

The Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) (Pub. L. 112-141) continues the Highway Safety Improvement Program (HSIP) under section 148, title 23 of the United States Code (U.S.C.) as a core Federal-aid program with the purpose to achieve a significant reduction in fatalities and serious injuries on all public roads. The MAP-21 amends the HSIP by requiring the DOT to establish several new requirements and remove several provisions that were introduced under Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). A revision to 23 CFR 924 is necessary to align with the MAP-21 provisions and clarify existing program requirements.

A key component of this proposal is the requirement for States to collect and use a set of proposed roadway data elements for all public roadways, including local roads.

Example proposed data elements include elements to classify and delineate roadway segments (e.g., beginning and end point descriptors), elements to identify roadway physical characteristics (e.g., median type and ramp length), and elements to identify traffic volume. The purpose of this proposal, in addition to satisfying a statutory requirement, is to improve States' ability to estimate expected number of crashes at roadway locations, with the ultimate goal to improve States' allocation of safety resources.

## II. Summary of the Major Provisions of the Regulatory Action in Question

This NPRM proposes to remove all existing references to the High Risk Rural Roads Program, 10 percent flexibility provisions, and transparency reports since MAP-21 eliminated these provisions.

The MAP-21 also requires the DOT to establish the update cycle for Strategic Highway Safety Plans (SHSP) [23 U.S.C. 148(d)(1)(A)], the content and schedule for the HSIP report [23 U.S.C. 148(h)(2)], and a subset of model roadway elements (a.k.a. Model Inventory of Roadway Elements (MIRE) fundamental data elements (FDE)) [23 U.S.C. 148(e)(2)(A)]. The NPRM proposes a 5-year SHSP update cycle, consistent with current practice in most States. The DOT proposes States continue to submit their HSIP reports on annual basis, by August 31 each year. In addition to existing reporting requirements and the proposed changes noted above, the DOT proposes that State DOTs document their safety performance targets in their annual HSIP report, and describe progress to achieve those safety performance targets in future HSIP reports. The DOT also proposes States use the HSIP online reporting tool to submit their annual HSIP

reports, consistent with the Office of the Inspector General's recommendations in the recent HSIP Audit<sup>1</sup>. Currently, a majority of States use the HSIP online reporting tool to submit their annual HSIP reports. We believe that the proposed roadway data elements are the fundamental set of data elements that an agency would need in order to conduct enhanced safety analyses to improve safety investment decisionmaking through the HSIP. We believe the proposed roadway elements also have the potential to support other safety and infrastructure programs in addition to the HSIP. The FHWA is proposing to require that States collect and use the same fundamental roadway elements that are recommended in the State Safety Data Systems Guidance published December 27, 2012.<sup>2</sup> We explain in more detail later in this proposed rule the reason(s) for proposing each individual roadway data element, but in general some of the elements are needed to address MAP-21 reporting requirements and some are needed in order to conduct improved analyses for predicting crashes. Later in this proposed rule we seek comments on whether we have selected the appropriate subset of roadway data elements in order to implement the statutory requirement and maximize net benefits.

The NRPM also proposes additions to clarify other MAP-21 provisions related to non-infrastructure projects and performance management requirements. The HSIP funds are now eligible for any type of highway safety improvement project (i.e. infrastructure

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<sup>1</sup> Office of the Inspector General, FHWA Provides Sufficient Guidance and Assistance to Implement the Highway Safety Improvement Program but Could Do More to Assess Program Results, Report Number: MH-2013-055. March 26, 2013 is available at the following Internet Web site: <http://www.oig.dot.gov/sites/dot/files/FHWA's%20Highway%20Safety%20Improvement%20Program%5E3-26-13.pdf>

<sup>2</sup> Guidance Memorandum on State Safety Data Systems, issued December 27, 2012, can be viewed at the following Internet Web site: <http://www.fhwa.dot.gov/map21/guidance/guidesafetydata.cfm>.

or non-infrastructure). The DOT proposes that agencies should use all other eligible funding programs for non-infrastructure projects, prior to using HSIP funds for these purposes. The DOT also proposes language throughout the NPRM to be consistent with the performance management requirements under 23 U.S.C. 150.

### III. Costs and Benefits

Of the three requirements mandated by MAP-21 (i.e. MIRE FDE, SHSP update cycle, and HSIP Report Content and Schedule) and addressed in this proposed rule, we believe that only the proposal regarding the MIRE FDE would result in additional costs. The SAFETEA-LU and the existing regulation require States to update their SHSP on a regular basis; the proposed rulemaking proposes that States update their SHSP every 5 years. The proposed rulemaking does not change the existing schedule for the HSIP report. The MAP-21 results in only minimal proposed changes to the HSIP report content related to reporting safety performance targets; however, additional costs as a result of this new content are negligible and the removal of the transparency report requirements reduces existing costs. Therefore, FHWA bases its cost-benefit analysis on the MIRE FDE component only and uses the “MIRE Fundamental Data Elements Cost-Benefit Estimation” Report<sup>3</sup> for this purpose.

Table 1 displays the estimated total net present value cost of the proposed requirements for States to collect, maintain, and use the proposed MIRE FDE for all public roadways. Total costs are estimated to be \$228.8 million undiscounted, \$220.6

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<sup>3</sup> “MIRE Fundamental Data Elements Cost-Benefit Estimation”, FHWA Report number: FHWA-SA-13-018, published March 2013 is available on the docket for this rulemaking and at the following Internet Web site: [http://safety.fhwa.dot.gov/rsdp/downloads/mire\\_fde\\_%20cbe\\_finalrpt\\_032913.pdf](http://safety.fhwa.dot.gov/rsdp/downloads/mire_fde_%20cbe_finalrpt_032913.pdf).

million discounted at 0.5 percent (discount rate used in the MIRE FDE Cost-Benefit Estimation Report), \$185.8 million discounted at 3 percent, and \$146.1 million discounted at 7 percent. Although not a specific requirement of this NPRM, the cost estimate also includes an estimate of the cost for States to extend their statewide linear referencing system (LRS) to all public roads, since an all-public-roads LRS is a prerequisite to realizing the full benefits from collecting and using the MIRE FDE. This cost is estimated to be \$17.2 million. The cost estimates reflect the additional costs that a State would incur based on what is not being collected through the Highway Performance Monitoring System (HPMS) or not already being collected through other efforts. In order for the rule to have net safety benefits, States would need to analyze the collected data, use it to identify locations with road safety improvement potential, shift project funding to those locations, and those projects would need to have more safety benefits than the projects invested in using current methods which do not incorporate the proposed MIRE FDE. We believe that this analysis and shifting of funding will not cost more than States' current methodology for choosing projects.

Table 1: Total Estimated National Costs for MIRE FDE (2013-2029 Analysis Period)

Cost Components	Total National Costs			
	Undiscounted	0.5%	3.00%	7.00%
Cost of Section 924.17				
Linear Referencing System (LRS)	\$17,239,277	\$17,180,594	\$16,895,724	\$16,467,622
Initial Data Collection	\$53,172,638	\$52,319,704	\$48,367,784	\$42,980,809
Roadway Segments	\$37,941,135	\$37,332,527	\$34,512,650	\$30,668,794
Intersections	\$8,284,572	\$8,151,681	\$7,535,951	\$6,696,633
Interchange/Ramp locations	\$832,734	\$819,376	\$757,485	\$673,120
Volume Collection	\$6,114,197	\$6,016,120	\$5,561,698	\$4,942,262
Maintenance of data system	\$154,945,661	\$147,701,120	\$117,370,098	\$83,834,343
Management & administration	\$3,449,812	\$3,394,474	\$3,138,075	\$2,788,571

Total Cost	\$228,807,387	\$220,595,892	\$185,771,683	\$146,071,346
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The cost of data collection for an average State is estimated at \$1,362,800 to complete the LRS and initial MIRE FDE collection efforts, \$66,600 for management and administration costs<sup>4</sup>, and \$2,896,100 for maintenance costs<sup>5</sup> over the analysis period of 2013–2029 (in 2013 U.S. dollars, at a 0.5% discount rate).<sup>6</sup> These estimates are net present value average costs on a per State basis. As such, across the 50 States and the District of Columbia, it is possible that the aggregate cost for LRS and initial data collection would be approximately \$69.5 million, and the annual maintenance cost would approach \$11.5 million.<sup>7</sup> This equates to approximately \$225,000 on average for a State to maintain the data annually.

The MIRE FDE are beneficial because collecting this roadway and traffic data and integrating those data into the safety analysis process would improve an agency's ability to locate problem areas and apply appropriate countermeasures, hence improving safety. The FHWA did not estimate the benefits of this rule. Instead, FHWA has conducted a break-even analysis. Table 2 shows the reduction in fatalities and injuries due to improvements in safety investment decisionmaking with the use of the MIRE FDE that would be needed for the costs of the data collection to equal the benefits, and for the costs of the data collection to equal half of the benefits. Using the 2012 comprehensive

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<sup>4</sup> DOT defines management and administration costs as the costs to administer contracts for data collection. The analysis estimates management and administration costs at 5 percent of the estimated initial MIRE FDE collection costs. The analysis assumes management and administration costs would not exceed \$250,000 per State.

<sup>5</sup> DOT defines maintenance costs as the costs to update the data as conditions change. The analysis assumes that 2 percent of roadway mileage would need to be updated annually.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.



cost of a fatality of \$9,100,000 and \$107,438 for an average injury, results in an estimated reduction of 0.38 fatalities and 24.77 injuries per average State over the 2013–2029 analysis period (at a 0.5% discount rate) would be needed to result in a benefit-cost ratio greater than 1:1.<sup>8</sup> To achieve a benefit/cost ratio of 2:1, fatalities would need to be reduced by 0.76 and injuries by 49.54 per average State over the same analysis period.<sup>9</sup>

Table 2: Reduction in Fatalities and Injuries Needed to Achieve Cost-Benefit Ratios of 1:1 and 2:1

Benefits	Number of Lives Saved/Injuries Avoided Nationally			
	Undiscounted	0.5%	3.00%	7.00%
<b>Benefit/Cost Ratio of 1:1</b>				
# of lives saved (fatalities)	19	19	21	23
# of severe injuries avoided	1246	1263	1353	1517
<b>Benefit/Cost Ratio of 2:1</b>				
# of lives saved (fatalities)	38	39	42	47
# of severe injuries avoided	2493	2527	2706	3034

Based on a preliminary study that found relationships between State’s use of roadway inventory data (in combination with their crash data in analyses supporting their safety investment decision making) and the magnitude of States’ fatal-crash reduction<sup>10</sup>, and other anecdotal information, we believe that this level of benefit may be achievable.

## BACKGROUND

On July 6, 2012, President Obama signed into law MAP-21 (Pub. L. 112-141, 126 Stat. 405). Among other things, the law authorizes funds for Federal-aid highways. In Section 1112 of this Act, Congress amended the HSIP of section 148 of title 23 of the

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> Wu, K.-F., Himes, S.C., and Pietrucha, M.T., “Evaluation of Effectiveness of the Federal Highway Safety Improvement Program,” Transportation Research Record, Vol. 2318, pp. 23-34, 2013.

United States Code (U.S.C.). The HSIP is a core Federal-aid program with the purpose to achieve a significant reduction in fatalities and serious injuries on all public roads. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. The FHWA proposes to incorporate the MAP-21 amendments, as well as general updates, into 23 CFR Part 924 Highway Safety Improvement Program to provide consistency with 23 U.S.C. 148 and to provide State and local safety partners with clarity on the purpose, definitions, policy, program structure, planning, implementation, evaluation, and reporting of the HSIP. Specifically, MAP-21 removed the requirement for States to prepare a Transparency Report, removed the High Risk Rural Roads set-aside, and removed the 10 percent flexibility provision for States to use safety funding in accordance with 23 U.S.C. 148(e). The MAP-21 also adds data system and improvement requirements, State SHSP update requirements, and requirements for States to develop HSIP performance targets. The DOT will address specific requirements related to HSIP performance target requirements through a separate, but concurrent, rulemaking effort.

### **Stakeholder Outreach**

The MAP-21 requires the Secretary of Transportation to establish a subset of the model inventory of roadway elements, or the MIRE FDE, that are useful for the inventory of roadway safety. Initial consideration of requiring collection of FDEs dates back to a report by the United States Government Accountability Office (GAO) on the progress made toward accomplishing the HSIP goals set forth in SAFETEA-LU. In November 2008, the GAO published “Highway Safety Improvement Program: Further Efforts

Needed to Address Data Limitations and Better Align Funding with States' Top Safety Priorities" to document their findings. The GAO report recommended that the Secretary of Transportation direct FHWA Administrator to take the following three actions:

- Define which roadway inventory data elements – contained in its proposal for a Model Minimum Inventory of Roadway Elements, as appropriate – a State needs to meet Federal requirements for HSIP;
- Set a deadline for States to finalize development of the required roadway inventory data; and
- Require States to submit schedules to FHWA for achieving compliance with this requirement.

Following extensive work on accommodating GAO's recommendations, FHWA published, "Guidance Memorandum on Fundamental Roadway and Traffic Data Elements to Improve the Highway Safety Improvement Program"<sup>11</sup> on August 1, 2011. As part of addressing GAO's recommendations, FHWA engaged in efforts to obtain public input. The FHWA hosted a peer exchange at the 2009 Asset Management Conference, two Webinars in December 2009, and one listening session at the January 2010 Transportation Research Board meeting to obtain input on possible approaches to address the GAO's recommendations. These sessions were designed to reach local and State transportation officials, as well as professional transportation safety organizations. These sessions were attended by over 150 representatives of Federal, State, and local

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<sup>11</sup> Guidance Memorandum on Fundamental Roadway and Traffic Data Elements to Improve the Highway Safety Improvement Program, issued August 1, 2011 can be viewed at the following Internet Web site: [http://safety.fhwa.dot.gov/tools/data\\_tools/memohsip072911/](http://safety.fhwa.dot.gov/tools/data_tools/memohsip072911/).

jurisdictions from across the country, as well as professional organizations. The purpose of these sessions was to gather feedback from stakeholders regarding mandatory roadway inventory elements and scheduling inventory data improvements, and to discuss other approaches from stakeholders regarding the collection and use of data for HSIP. During the Webinars and the listening session, FHWA listened carefully to the comments and concerns expressed by the stakeholders and used that information when developing the August 1, 2011, Guidance Memorandum. The August 1, 2011, guidance memorandum formed the basis for the State Safety Data System guidance published on December 27, 2012.<sup>12</sup>

### **Discussion of Proposed Rulemaking**

The proposed regulatory text follows the same format and section titles currently in 23 CFR 924, but FHWA proposes substantive changes to each section. Specifically, FHWA proposes to replace the existing 23 CFR Part 924 with new language in the following sections.

#### Discussion of Proposed Rulemaking to Section 924.1 Purpose

The FHWA proposes to clarify that the purpose of this regulation is to prescribe requirements for the HSIP, rather than to set forth policy on the development, implementation and evaluation of a comprehensive HSIP in each State.

#### Discussion of Proposed Rulemaking to Section 924.3 Definitions

The FHWA proposes to remove the following eight definitions, because they would no longer be used in the regulation: “high risk rural road,” “highway-rail grade

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<sup>12</sup> Guidance Memorandum on State Safety Data Systems, issued December 27, 2012, can be viewed at the following Internet Web site: <http://www.fhwa.dot.gov/map21/guidance/guidesafetydata.cfm>.

crossing protective devices,” “integrated interoperable emergency communication equipment,” “interoperable emergency communications system,” “operational improvements,” “safety projects under any other section,” “State,” and “transparency report.”

The FHWA proposes to remove the definition for “high risk rural road” because MAP-21 removed the High Risk Rural Road and associated reporting requirements.

The FHWA proposes to remove the definition for “highway-rail grade crossing protective devices” because this term was used in the definition of highway safety improvement projects as an example project and FHWA proposes removing the list of example projects. “Highway-rail grade crossing protective devices” was also used in sec. 924.11 (Implementation) to reference to the 23 U.S.C. 130(f) requirement for States to spend at least 50 percent of their Railway-Highway Crossing Funds on protective devices, which FHWA is proposing to remove.

The FHWA proposes to remove the definition for “integrated interoperable emergency communication equipment” because this term was only used in the definition of highway safety improvement project as an example project and defined separately for clarification. The FHWA proposes removing the example list of highway safety improvement projects. The FHWA proposes to remove the definition for “interoperable emergency operations system” because this term was only used in the definition of integrated interoperable emergency communication equipment, which FHWA is also proposing to remove.

The FHWA proposes to remove the definition for “operational improvements” because it was only used in the context of the High Risk Rural Roads Program, which MAP-21 removed. “Operational improvements” was also used in the definition of a highway safety improvement project as an example project, and FHWA proposes to remove the example list of highway safety improvement projects, as well.

The FHWA proposes to remove the definition for “safety projects under any other section” because this term was used in reference to the 10 percent flexibility provision which no longer exists under MAP-21.

The FHWA proposes to remove the definition for “State” because HSIP requirements apply to Puerto Rico under MAP-21; therefore, the definition of State in 23 U.S.C. 101(a) applies to HSIP, as well.

The FHWA proposes to remove the definition for “transparency report” because MAP-21 no longer requires States to submit a transparency report as part of the HSIP reporting requirements.

The FHWA proposes to revise eight definitions to provide clarity or consistency for each as related to the regulation.

The FHWA proposes to revise the definition for the term “highway” to match the definition of 23 U.S.C. 101(a) and clarify the provision that HSIP funds can be used for highway safety improvement projects on any facility that serves pedestrians and bicyclists pursuant to 23 U.S.C. 148(e)(1)(A). This clarification relates to HSIP funding and projects, and not to collection of MIRE FDEs. The proposed rule would not require the collection of MIRE FDE on pedestrian and bicycle facilities.

The FHWA proposes to revise the definition of “highway safety improvement program” by adding the acronym “HSIP” to indicate that, when the acronym HSIP is used in the regulation, it is referring to the program carried out under 23 U.S.C. 130 and 148, not individual projects. For further clarification, FHWA proposes to include a listing of the HSIP components—SHSP, Railway-Highway Crossings program, and program of highway safety improvement projects—to the definition.

The FHWA proposes to revise the definition of “highway safety improvement project” to specify that it includes strategies, activities, and projects and that such projects can include both infrastructure and non-infrastructure projects under 23 U.S.C. 148(a)(4)(A) and (c)(2)(C)(i). The FHWA also proposes to remove the listing of project types, and instead refer to 23 U.S.C. 148(a) for the example list of projects, because FHWA does not want States to consider a listing of projects in the regulation to be an exhaustive, all-inclusive list.

The FHWA proposes to revise the definition of “public grade crossing” in order to clarify that associated sidewalks and pathways and shared use paths are also elements of a public grade crossing pursuant to the Rail Safety Improvement Act of 2008, Public Law 110-432, Section 2(a)(1).

The FHWA proposes to add to the definition of “public road” that non-State-owned public roads and roads on tribal lands are considered public roads pursuant to 23 U.S.C. 148(a)(12)(D), (b)(2), (c)(2)(A)(i), (c)(2)(D)(ii) and (d)(1)(B)(viii).

The FHWA proposes to remove “vehicle data” from the listing of safety data components in the definition of “safety data” to be consistent with MAP-21. 23 U.S.C. 148(a)(9)(A).

The FHWA proposes to expand the definition of “safety stakeholder” to include a list of stakeholders. Although the list is not exhaustive, FHWA proposes including this list to ensure that States are aware of the range of stakeholders.

The FHWA proposes to revise the definition of “serious injury” to reference the latest edition of the Model Minimum Uniform Crash Criteria definition. The FHWA plans for the effective implementation date of this definition to align with the effective date of the same definition used in the safety performance management NPRM currently underway. Interested persons should refer to the safety performance management rulemaking for additional information (see Docket No. FHWA-2013-0020 or RIN 2125-AF49).

Finally, FHWA proposes to revise the definition of “strategic highway safety plan” to indicate that the SHSP is a multidisciplinary plan, rather than a data-driven one to be consistent with MAP-21. The FHWA proposes adding multidisciplinary to the definition since that is an important component of the SHSP. The FHWA would also include the acronym “SHSP” in the definition.

The FHWA proposes to add four definitions of terms used in the revised regulation. The FHWA proposes to add a definition for “Model Inventory of Roadway Elements (MIRE) Fundamental Data Elements (FDE)” because this listing of roadway and traffic data elements, needed to support advanced safety analyses, would be



incorporated in this proposed regulation. The FHWA also proposes to add definitions for “reporting year,” “spot safety improvement,” and “systemic safety improvement” because these terms would be used in the proposed revised regulation. The FHWA proposes to define “reporting year” as a 1-year period defined by the State so that States have the flexibility to define the reporting year that best fits their budget and planning cycles. The FHWA proposes to define “spot safety improvement” and “systemic safety improvement” to clarify the difference between these two types of improvements. A “spot safety improvement” would be an improvement or set of improvements that is implemented at a specific location on the basis of location-specific crash experience or other data-driven means; whereas, a “systemic safety improvement” would be an improvement or set of improvements that is widely implemented based on high-risk roadway features correlated with particular severe crash types.

The FHWA proposes to maintain the current definitions without change for “hazard index formula” and “road safety audit.”

#### Discussion of Proposed Rulemaking to Section 924.5 Policy

In paragraph (a), FHWA proposes minor editorial modifications to explicitly state that the HSIP’s objective is to significantly reduce fatalities and serious injuries, rather than “the occurrence of and potential for fatalities and serious injuries” as written in the existing regulation.

The FHWA proposes to delete from paragraph (b) the provisions related to 10 percent flex funds, due to the removal of the flex fund provisions in MAP-21. The FHWA proposes to add language that funding shall be used for highway safety

improvement projects that have the greatest potential net benefits and that achieve the State's fatality and serious injury performance targets in order to correlate this regulation with the provisions of section 1203 of MAP-21 regarding safety performance targets under 23 U.S.C. 150. The FHWA also proposes to clarify that prior to approving the use of HSIP funds for non-infrastructure related safety projects, FHWA will assess the extent to which other Federal funds provided to the States for non-infrastructure safety programs (including but not limited to those administered by the National Highway Traffic Safety Administration (NHTSA) and Federal Motor Carrier Safety Administration) are programmed. The FHWA expects States to fully program these non-infrastructure funds prior to seeking HSIP funds for such uses. The FHWA's intent is for States to use all available resources to support their highway safety needs and make progress toward a significant reduction in fatalities and serious injuries on all public roads. (In the case of non-infrastructure projects involving NHTSA grant funds, State DOTs should consult State Highway Safety Offices about the project eligibility requirements under 23 U.S.C. 402.)

The FHWA proposes to remove the first sentence of paragraph (c) regarding the use of other Federal-aid funds, since this information is repeated in section 924.11 (Implementation) and is better suited for that section. The FHWA also proposes minor edits to the paragraph to provide more accurate references to the National Highway Performance Program (NHPP) and the Surface Transportation Program (STP) Federal-aid programs, and remove references to the Interstate Maintenance, National Highway System, and Equity Bonus funding sources, since these funding programs have been

consolidated into other program areas. As stated in the existing regulation, safety improvements that are provided as part of a broader Federal-aid project should be funded from the same source as the broader project. This provision remains unchanged by the proposed revisions.

#### Discussion of Proposed Rulemaking to Section 924.7 Program Structure

In paragraph (a), FHWA proposes to clarify the structure of the HSIP by specifying that the HSIP is to include a SHSP, a Railway-Highway Crossings Program, and a program of highway safety improvement projects (infrastructure and non-infrastructure). Currently, the existing regulation uses the term HSIP in reference to the program under 23 U.S.C. 148 as well as the State's HSIP as defined in 23 U.S.C. 148(a)(11). The existing program structure does not change; however, this has been a point of confusion so FHWA believes that listing the three main components will help States better understand the program structure.

The FHWA proposes to clarify paragraph (b) by specifying that the HSIP shall include a separate process for planning, implementation, and evaluation of the HSIP components described in section 924.7(a) on all public roads. The proposed revisions would clarify that these processes shall cover all public roads. The FHWA also proposes minor revisions to require that each process be developed in cooperation with the FHWA Division Administrator and in consultation with officials of the various units of local and tribal governments; it further adds that other safety stakeholders should also be consulted, as appropriate. The proposed changes clarify that each State would work with FHWA to develop appropriate processes and would consult with local governments and other

stakeholders in the development of those processes. These changes reflect common practices in developing State Transportation Improvement Plans (STIP) under 23 CFR 450.216(b), (c), (d) and (f).” In addition, FHWA proposes to clarify that the processes developed are in accordance with the requirements of 23 U.S.C. 148. Finally, FHWA proposes to remove the existing last sentence of the regulation that references what the processes may include, since that language is more appropriate for guidance documents rather than regulation.

#### Discussion of Proposed Rulemaking to Section 924.9 Planning

The FHWA proposes to reorganize and revise paragraph (a) regarding the HSIP planning process so that it reflects the sequence of actions that States should take in the HSIP planning process. As a result of this reorganization, the HSIP planning process would now include six distinct elements, including a separate element for updates to the SHSP which currently exists under the safety data analysis processes. The FHWA also proposes removing existing item (a)(3)(iii) regarding the High Risk Rural Roads program to reflect the change in legislation. Proposed key revisions to each element of section 924.9(a) are described in the following paragraphs:

(a)(1) The proposed revision would group data as “safety data,” rather than specifying individual data components. The proposed language also would specify that roadway data shall include MIRE FDEs under 23 U.S.C. 148(a)(5) and (f)(1) and (2), and railway-highway grade crossing data including all fields from the DOT National Highway-Rail Crossing Inventory, consistent with 23 U.S.C. 130. The FHWA includes

the use of MIRE FDEs consistent with guidance<sup>13</sup> issued by FHWA on December 27, 2012. The guidance memorandum provides background and guidance information on roadway and traffic data elements that can be used to improve safety investment decisionmaking through the HSIP. The *Model Inventory of Roadway Elements—MIRE, Version 1.0*<sup>14</sup>, report defines each roadway element and describes its attributes. The fundamental data elements are a basic set of elements on which an agency would need to conduct enhanced safety analyses regardless of the specific analysis tools used or methods applied. The elements are based on findings in the FHWA report “Background Report: Guidance for Roadway Safety Data to Support the Highways Safety Improvement Program (Background Report).”<sup>15</sup> The fundamental data elements have the potential to support other safety and infrastructure programs in addition to the HSIP. Further discussion of the MIRE FDEs is contained below in section 924.17.

(a)(2) The proposed revision would clarify that safety data includes all public roads.

(a)(3 [formerly 3(ii)]) The FHWA proposes to specify the SHSP update cycle, as required by MAP-21, and a process for updating the SHSP. The FHWA is proposing a 5-year update cycle, which is the current practice in most States. For example, 39 States updated their SHSP or had an SHSP update underway within a 5-year timeframe. A

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<sup>13</sup> Guidance Memorandum on State Safety Data Systems, issued December 27, 2012, can be viewed at the following Internet Web site: <http://www.fhwa.dot.gov/map21/guidance/guidesafetydata.cfm>.

<sup>14</sup> *Model Inventory of Roadway Elements—MIRE, Version 1.0*, Report No. FHWA-SA-10-018, October 2010, [http://www.mireinfo.org/collateral/mire\\_report.pdf](http://www.mireinfo.org/collateral/mire_report.pdf).

<sup>15</sup> “Background Report: Guidance for Roadway Safety Data to Support the Highways Safety Improvement Program (Background Report)”, FHWA Report number: FHWA-SA-11-39, published June 2011 is available at the following Internet Web site: [http://safety.fhwa.dot.gov/tools/data\\_tools/dcag.cfm](http://safety.fhwa.dot.gov/tools/data_tools/dcag.cfm).

number of those States are on the third version of their SHSP. Of those States that have not delivered an SHSP update, they have an update planned or an update well underway. Many of the elements are currently contained in former item (a)(3)(ii); however, FHWA proposes reordering and combining some of the items to reflect the sequence of actions States should take in HSIP planning. The proposed revisions highlight the importance of the SHSP in the HSIP planning process and that it is a separate element. Proposed sub-item (v) would require the SHSP performance-based goals be consistent with 23 U.S.C. 150 performance measures and be coordinated with other State highway safety programs. This would provide a necessary link to MAP-21 performance goals, tying the safety goals together so that the SHSP goals are consistent with those in 23 U.S.C. 150 and are coordinated with the NHTSA safety goals.<sup>16</sup>

(a)(4(i) [formerly 3(i)]) The FHWA proposes to rephrase this item to specify that the program of highway safety improvement projects (rather than the HSIP) is to be developed in accordance with 23 U.S.C. 148(c)(2). The FHWA also proposes to remove the listing of the 23 U.S.C. 148(c)(2) elements from the regulation because it is repetitive.

(a)(4(ii) [formerly 3(iv)]) The FHWA proposes removing existing item (C) regarding consideration of dangers to larger numbers of people at public grade crossings, since this element is already included in the hazard index formula and is more appropriate for guidance.

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<sup>16</sup> According to MAP-21, the NHTSA safety performance goals are to be limited to those described in “Traffic Safety Performance Measures for States and Federal Agencies” (DOT HS 811 025). This report is available at the following Internet Web site: <http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811025.pdf>. The document found at this link can also be found in the docket at <http://www.regulations.gov>.

(a)(5 [formerly 4]) The FHWA proposes to remove reference to “hazardous locations, sections and elements” to clarify that an engineering study is applicable to the development of all highway safety improvement projects, including those that address the potential for crashes.

(a)(6 [formerly 5]) The FHWA proposes removing the following existing items because these elements are integral components of the SHSP, not to individual projects: (iv) regarding correction and prevention of hazardous conditions, (v) regarding other safety data-driven criteria as appropriate in each State, and (vi) regarding integration with the various transportation processes and programs, from the process for establishing and implementing highway safety improvement projects. The FHWA believes that removing these items would help ensure that the funds are being appropriately spent and are meeting the objectives of the HSIP.

The FHWA proposes to change the references for 23 U.S.C. 130 and 148 to 23 U.S.C. 104(b)(3) for consistency with other sections in this regulation; remove the reference to 23 U.S.C. 133, since this is not the primary intent of this program; and replace 23 U.S.C. 104(f) with 104(d) to reflect the change in legislation numbering. The FHWA also proposes to add language to clarify that use of these funding categories is subject to the individual program’s eligibility criteria and the allocation of costs based on the benefit to each funding category.

In paragraph (c), FHWA proposes to add non-infrastructure safety projects, to be funded under 23 U.S.C. 104(b)(3), to the list of highway safety improvement projects that would be carried out as part of the STIP processes consistent with the requirements of 23

U.S.C. 134 and 135 and 23 CFR part 450. The FHWA also proposes to require States to be able to distinguish between infrastructure and non-infrastructure projects in the STIP in order to assist in tracking of the funds programmed on infrastructure and non-infrastructure projects for State and FHWA reporting purposes.

#### Discussion of Proposed Rulemaking to Section 924.11 Implementation

The FHWA proposes removing former paragraph (b) describing the 10 percent flex funds and former paragraph (c) describing funding set asides for improvements on high risk rural roads to reflect changes associated with MAP-21.

The FHWA proposes adding new paragraph (b) to require States to incorporate an implementation plan by July 1, 2015, for collecting MIRE FDEs in their State's Traffic Records Strategic Plan. The FHWA proposes the implementation date to be the July 1 following the publication of the final rule, unless the final rule is published less than 6 months before July 1 in which case, the implementation date would be July 1 of the following calendar year. The FHWA proposes July 1 because that date reflects the annual due date for States' Highway Safety Plans. The Highway Safety Plans would include all grant applications, including those for 23 U.S.C. 405 funds, which require States to develop a multiyear traffic records strategic plan if they are applying for 23 U.S.C. 405(c) grants. The FHWA also proposes specifying that States shall complete collection of the MIRE FDEs on all public roads by the end of the fiscal year 5 years after the anticipated effective date of a final rule for this NPRM. For example, if the final rule is effective in August of 2016, then the collection would need to be completed by September 30, 2021. The FHWA believes that 5 years is sufficient for States to collect



the MIRE FDEs. The FHWA plans to include a specific time period in the regulation based upon the effective date of a final rule for this NPRM.

The FHWA proposes to relocate and clarify existing requirements related to SHSP implementation in new paragraph (c). As part of the existing HSIP planning process, States are currently required to determine priorities for SHSP implementation (sec. 924.9(a)(3)(ii)(I)) and propose a process for implementation of the plan (sec. 924.9(a)(3)(ii)(L)). The FHWA proposes to clarify that the SHSP shall include actions that address how the SHSP emphasis area strategies would be implemented. The FHWA proposes this clarification to ensure that States develop actions that address how the SHSP emphasis area strategies would be implemented contributing to significant reductions in fatalities and serious injuries. The inclusion of action steps or plans in a State SHSP is common practice. A number of State SHSPs<sup>17</sup> currently include actions to implement the emphasis areas for their respective State. For example, a number of State SHSPs, including Pennsylvania, Minnesota, Nevada, and Rhode Island, contain actions to implement emphasis areas for their respective States. Each action step includes identification of the organization having primary responsibility in overseeing implementation of the associated action.

In paragraph (d), FHWA proposes removing language regarding specific use of 23 U.S.C. 130(f) funds for railway-highway grade crossings, because reference to 23 U.S.C. 130 as a whole is more appropriate than specifying just section (f). The FHWA would retain language about the Special Rule under 23 U.S.C. 130(e)(2) authorizing use

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<sup>17</sup> Individual State SHSPs are linked from the FHWA Office of Safety Web site at: [http://safety.fhwa.dot.gov/hsip/shsp/state\\_links.cfm](http://safety.fhwa.dot.gov/hsip/shsp/state_links.cfm).

of funds made available under 23 U.S.C. 130 for HSIP purposes if a State demonstrates to the satisfaction of the FHWA Division Administrator that the State has met its needs for installation of protective devices at railway-highway grade crossings, in order to ensure that all States are aware of this provision.

The FHWA proposes to revise paragraph (g) [formerly (h)] regarding the Federal share of the cost of a highway safety improvement project carried out with funds apportioned to a State under section 104(b)(3) to reflect 23 U.S.C. 148(j). The FHWA proposes to remove existing paragraphs (g) and (i) because the regulations are covered elsewhere and therefore do not need to be in this regulation. In particular, existing paragraph (g) is addressed in 23 CFR 450.216, which documents the requirements for the development and content of the STIP, including accounting for safety projects. In addition, existing paragraph (i) regarding implementation of safety projects in accordance with 23 CFR 630, Subpart A applies to all Federal-aid projects, not just HSIP, and is therefore not necessary in the HSIP regulation.

The FHWA proposes to retain existing paragraphs (a), (e), and (f) with minimal, editorial changes.

#### Discussion of Proposed Rulemaking to Section 924.13 Evaluation

The FHWA proposes the following changes to paragraph (a) regarding the evaluation of the HSIP and SHSP:

The FHWA proposes to revise item (1) to clarify that the process is to analyze and assess the results achieved by highway safety improvement projects generated from the SHSP and RHCP, and not the HSIP as stated in the existing regulation. This proposed

change is consistent with the clarifications to the Program Structure, as described in the Discussion of Proposed Rulemaking to Section 924.7 Program Structure above. States currently evaluate highway safety improvement projects to support evaluation of the HSIP; therefore, FHWA does not believe this change will result in any additional cost to the States because it will not require them to change their current evaluation practices or the way they report evaluations to FHWA. The FHWA invites comments on the impact of this proposed clarification to the existing regulations. The FHWA also proposes to revise the outcome of this process to align with the performance targets established under 23 U.S.C. 150. This reflects the new requirement in section 1203 of MAP-21 for the establishment of performance targets; this requirement is the subject of a concurrent NPRM.

The FHWA proposes to revise item (2) to clarify that the evaluation of the SHSP is part of the regularly recurring update process that is already required under the current regulations. As part of this change, FHWA proposes to remove existing sub-item (i) because ensuring the accuracy and currency of the safety data is already part of regular monitoring and tracking efforts. The FHWA proposes to revise new sub-item (i) [formerly (ii)] to reflect that evaluation of the SHSP would include confirming the validity of the emphasis areas and strategies based on analysis of current safety data. Finally, in new sub-item (ii) [formerly (iii)] FHWA proposes to clarify that the SHSP evaluation must identify issues related to the SHSP's implementation and progress that should be considered during each subsequent SHSP update. Subsequent SHSP updates would need to take into consideration the issues experienced in implementing the

previous plan and identify methods to overcome those issues. In addition, the SHSP evaluation and subsequent updates would ensure that HSIP resources are being aligned in a manner to reduce fatalities and serious injuries.

The FHWA proposes a minor revision to paragraph (b), item (1) to specify that safety data used in the planning process would be updated based on the results of the evaluation under paragraph 1 of section 924.13(a)(1). The FHWA proposes this change to reflect that current safety data be used in the planning process.

Finally, FHWA proposes minor revisions to paragraph (c) to remove references to the STP and NHS (now NHPP) since evaluation is not the primary intent of these programs; replace the reference to 23 U.S.C. 104(f) with 104(d) to reflect the change in legislation numbering; and update references to the U.S.C. The FHWA also proposes to add language to clarify that use of these funding categories is subject to the individual program's eligibility criteria and the allocation of costs based on the benefit to each funding category.

#### Discussion of Proposed Rulemaking to Section 924.15 Reporting

The FHWA proposes to remove the requirements for reporting on the High Risk Rural Roads program and the transparency report because MAP-21 removes these reporting requirements.

The FHWA proposes to revise the HSIP report requirements to specify what should be contained in those reports. In paragraph (a), FHWA proposes to require that the report be submitted via the HSIP online reporting tool. Additional information about the online reporting tool is available on the following Internet Web site:

<http://safety.fhwa.dot.gov/hsip/resources/onrpttool/>. Submitting reports in this manner would lessen the burden on States and would assist FHWA in review and evaluation of the reports.

The FHWA proposes to replace sub-items (i) and (ii) of paragraph (1) in their entirety. In sub-item (i), FHWA proposes to indicate that the report needs to describe the structure of the HSIP, including how HSIP funds are administered in the State, and a summary of the methodology used to develop the programs and projects being implemented under the HSIP on all public roads. In sub-item (ii), FHWA proposes that the report describe the process in implementing the highway safety improvement projects and compare the funds programmed in the STIP for highway safety improvement projects with those obligated during the reporting year. The FHWA also proposes that the report include a list of highway safety improvement projects (and how each relates to the State SHSP) that were obligated during the reporting year, including non-infrastructure projects.

The FHWA proposes a new sub-item (iii) that would indicate that the report shall describe the progress in achieving safety performance targets (as required by MAP-21 section 1203), including the established safety targets (number and rate of fatalities and serious injuries), trends, and applicability of special rules defined in 23 U.S.C. 148(g). The safety performance targets in this new sub-item (iii) would be presented in the report for all public roads by calendar year consistent with 23 U.S.C. 150(d).

In new sub-item (iv), FHWA proposes that the report would assess improvements accomplished by describing the effectiveness of highway safety improvement projects

implemented under the HSIP. Finally, FHWA proposes new sub-item (v) to require that the HSIP report be compatible with the requirements of 29 U.S.C. 794(d) (Section 508 of the Rehabilitation Act) whereas previously only the transparency report was required to be compatible.

The FHWA does not propose any changes to the report describing progress to implement railway-highway grade crossing improvements.

#### Discussion of Proposed Addition of Section 924.17 MIRE Fundamental Data Elements

The FHWA proposes to add section 924.17 containing the MIRE FDEs for the collection of roadway data. The FHWA proposes to include this section to comply with section 1112 of MAP-21 that amends 23 U.S.C. 148 to require model inventory of roadway elements as part of data improvement. As mandated under 23 U.S.C. 148(f)(2), the Secretary of Transportation shall (A) establish a subset of the model inventory of roadway elements that are useful for the inventory of roadway safety; and (B) ensure that States adopt and use the subset to improve data collection. The proposed MIRE FDEs have been published in several FHWA documents as discussed previously in the Discussion of Proposed Rulemaking to Section 924.9 Planning. This proposed section would consist of two tables of MIRE FDEs listing the MIRE name and number for roadway segments, intersections, and interchanges or ramps as appropriate. Table 1 contains the proposed MIRE FDEs for Roads with Average Annual Daily Traffic (AADT) greater than or equal to 400 vehicles per day. The FHWA recognizes that fewer data elements are required to characterize two-lane roads, which carry lower traffic volumes than other types of roadway. Therefore, FHWA proposes a reduced set of

MIRE FDE for roadways with less than 400 AADT. Table 2 of Section 924.17 contains the proposed MIRE FDEs for Roads with AADT less than 400 vehicles per day. The *Model Inventory of Roadway Elements—MIRE, Version 1.0*<sup>18</sup>, report defines each roadway element and describes its attributes.

The FHWA proposes the 400 AADT breakpoint because it is used by FHWA and the American Association of State Highway Transportation Officials (AASHTO) to characterize low volume roads. In addition to the legislative requirement that the HSIP address all public roads, FHWA believes it is in the public's best interest to collect the MIRE FDE on low volume roads because a substantial number of fatalities occur on these roads. Based on an estimate of the number of fatalities using the FARS breakdown of crashes by roadway functional class and estimates from Iowa, Minnesota, and Missouri of the mileage of roadways by AADT range for various functional classes, nearly 15 percent of total fatalities occur on roads with AADT <100, as illustrated in Table 3 below.

Table 3: Estimated Percent of Fatalities on < 400 AADT Roads

AADT (vehicles per day)	Estimated Percentage of Total Fatalities
< 400	17.7
300 – 399	0.6
200 – 299	0.8
100 – 199	1.5
<100	14.6

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<sup>18</sup> *Model Inventory of Roadway Elements—MIRE, Version 1.0*, Report No. FHWA-SA-10-018, October 2010, [http://www.mireinfo.org/collateral/mire\\_report.pdf](http://www.mireinfo.org/collateral/mire_report.pdf).

The FHWA acknowledges that its estimates of fatalities on low volume are not based on a comprehensive data source. Therefore, FHWA seeks comments on other data sources and methodologies for analyzing the distribution of traffic accidents involving fatalities and serious injuries on low volume roads. While FHWA is mindful that it must satisfy the statutory requirement to collect information on all public roads, FHWA welcomes comments on whether there are some roads in which collecting certain MIRE FDE is not substantially beneficial to improving roadway safety, and if there are such roads, how the final rule might clearly distinguish between roads that require certain MIRE FDE and roads that may require only a smaller subset of MIRE FDE.

While FHWA is not proposing requirements for how States must collect and process the proposed MIRE FDE, FHWA envisions that States would do so using a variety of means, tools and technology, including, but not limited to: data mining existing resources (e.g., existing State-maintained roadway inventories, as-built plans, and construction records), ground-based imaging (e.g., driving along roads and using mobile mapping and LiDAR), and aerial imaging (both with and without LiDAR). In addition, FHWA understands that State DOTs may need to work with local transportation authorities to collect the MIRE FDE. A description of various methodologies for collecting MIRE FDE is provided in the MIRE Data Collection Guidebook<sup>19</sup>. For each methodology, the guidebook includes a discussion of available and emerging technologies, data collection efficiencies and potential concerns. The guide also presents suggested data collection methodologies for specific MIRE data elements, and specific guidance on how the elements can be collected

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<sup>19</sup> FHWA, MIRE Data Collection Guidebook, June 2013, <http://safety.fhwa.dot.gov/rsdp/downloads/datacollectionguidebook.pdf>



and considerations for collection. The FHWA seeks comments and cost data on the methods States plan to use to fulfill the proposed data collection requirements.

The MAP-21 requires that the subset of model inventory of roadway elements be useful for the inventory of roadway safety. The proposed MIRE FDE were developed based on stakeholder input and by identifying the data elements that are required to use safety analysis methods recommended in the AASHTO Highway Safety Manual. The FHWA believes that the collection and use of the proposed MIRE FDE, when integrated with crash data, will enable jurisdictions to better estimate expected crash frequencies compared to existing data and methods used by States. In addition to addressing a statutory requirement, the purpose of the proposed MIRE FDE collection is to improve the data and methods States currently use to predict crashes and allocate safety resources. The FHWA believes that as States use advanced analysis methods (i.e., incorporating the proposed MIRE FDE and using methods such as those presented in the AASHTO Highway Safety Manual) they will implement more effective safety improvement projects than they currently do. As described in Chapter 3, Fundamentals, of the AASHTO Highway Safety Manual, research and experience has shown that methods that attempt to predict a location's future crashes based solely on the location's past crashes are not as accurate as methods that attempt to predict a location's future crashes using the proposed MIRE FDE in combination with crash frequency data using analytical methods such as those recommended in the AASHTO Highway Safety Manual. The FHWA believes that current methods, which heavily emphasize past number and rate of crashes prompt States to consider safety projects in locations that may be less than optimal,

because a location's past number of crashes is not a good predictor of its future number of crashes. For example, the addition of a school or a residential development may increase a location's traffic volume which in turn may increase the number of crashes at the site. Using past crash data alone would not account for such changes. The MIRE FDE improves a State's ability to predict future crashes using statistical methods that combine the recent crash history at a location with crash data from many other similar locations (in the form of a regression model of crash frequency versus traffic volume unique to the particular roadway type). The DOT requests comments on the extent to which use of the proposed MIRE FDE, in combination with crash frequency data, will substantially improve States' ability to predict future crashes and more effectively allocate safety resources relative to existing data and methods used by States which do not incorporate the proposed MIRE FDE.

A general description of how we expect States would use the proposed MIRE FDE is the following. First, the State would compile and monitor actual crash frequency data for each location. Next, the State would use the collected MIRE FDE to identify the roadway type and to use the safety performance function for that roadway type to estimate the predicted crash frequency for such a location. Then, the State would combine the predicted crash frequency for similar sites with the observed crash frequency at each particular location, using methods described in the AASHTO Highway Safety Manual, to derive the expected average crash frequency for each location along its roadway network. Finally, States would rank locations based on one, or preferably several measures identified in the AASHTO Highway Safety Manual. Examples of such

measures include expected crash frequency or a measure of the “excess” crash frequency. The excess crash frequency may be computed as the difference between the predicted and expected crash frequency at the location or the difference between the observed and expected crash frequency at the location. For example, if a location’s actual number of crashes is high compared to its expected number of crashes, that would be one indicator that a State should consider for deciding where to allocate safety resources. States would also consider other indicators when finally deciding when and where to allocation safety resources. Past number and rate of crashes, “excess” crash frequency, cost of countermeasure implementation and other factors would be considered in final project selection. States would use multiple indicators when deciding where and how to allocate safety resources with the ultimate goal to identify and implement projects that have the highest net benefits. We request comments on whether our understanding of how States would use the proposed MIRE FDE is correct.

For example, “excess crashes” (i.e., the actual number of crashes minus the expected number of crashes) may not be the only indicator used for deciding where and how to allocate safety resources. A location’s absolute number of crashes is also an important indicator to consider when seeking to identify the most cost-beneficial projects. For example, a State implementing a safety project at a location that performs well relative to its expected number of crashes -- but still has a high number of total crashes -- may be a more effective use of safety resources than implementing a project at a location that performs poorly relative to its expected number of crashes but has a smaller number of total crashes.

The specific roadway data requirements to estimate expected average crash experience on our roadways using safety performance functions and related safety management methods include the (1) type of roadway (e.g., two-lane rural highway versus six-lane urban freeway) and (2) exposure to crash risk (traffic volume, as measured by AADT, and length for roadway segments and ramps). The FHWA believes that the proposed MIRE FDE is the minimum subset of data elements needed to characterize the type of roadway and exposure on all public roads. The proposed MIRE FDE are the data elements whose effects on safety are best understood and most commonly applied by the highway safety profession, as documented in the AASHTO Highway Safety Manual, and that are most appropriate for use in the initial screening of the State's roadway network for sites with the greatest potential for safety improvement through infrastructure investment. The FHWA acknowledges that other variables may be equally (or more) important for predicting future crashes. Because the proposed MIRE FDE are only a subset of variables that may be useful for estimating expected crashes, it is possible that using only the proposed MIRE FDE in prediction models may produce biased results of future crashes. After it issues a final rule, FHWA will continue to work with stakeholders to explore other data elements for inclusion in the regulations or guidance to improve prediction models, or data elements to remove from regulations in the future. The FHWA invites comments on ways to minimize the cost of using the proposed MIRE FDE (e.g., incorporating the data into models), including any technical or other assistance that could be offered by FHWA.

The proposed MIRE FDE can be divided into the following categories: (1) MIRE FDE that define individual roadway segments, intersections, and interchange/ramps, (2) MIRE FDE that delineate basic information needed to characterize the roadway type and exposure, and (3) MIRE FDE that identify governmental ownership and functional classification (these data are needed to satisfy other MAP-21 reporting requirements).

Table 4 illustrates the MIRE FDE needed to uniquely identify individual segments, intersections and interchange/ramps in order to (a) associate crash data and traffic volume data to them, (b) locate them geospatially, and (c) conduct analyses on individual segments, intersections and interchange/ramps.

Table 4: MIRE FDE Identifiers

<b>Segments</b>	<b>Intersections</b>	<b>Interchange/Ramps</b>
Segment Identifier	Unique junction identifier	Unique Interchange Identifier
Route Number	Location Identifier for Road 1 Crossing Point	Location Identifier for Roadway at Beginning Ramp Terminal
Route/Street Name	Location Identifier for Road 2 Crossing Point	Location Identifier for Roadway at End Ramp Terminal
Federal-Aid/Route Type	Unique Approach Identifier	
Begin Point Segment Descriptor		
End Point Segment Descriptor		
Direction of Inventory		

Table 5 illustrates the MIRE FDE needed to characterize the roadway type and exposure. This information is used as inputs to estimate the expected crash frequency on individual segments, intersections and interchanges/ramps using the methods described in the AASHTO Highway Safety Manual.

Table 5: MIRE FDE Roadway Characteristics

<b>Segments</b>	<b>Intersections</b>	<b>Interchange/Ramps</b>
Rural/Urban Designation	Intersection/Junction Geometry	Ramp Length
Surface Type	Intersection/Junction Traffic Control	Roadway Type at Beginning Ramp Terminal
Segment Length	AADT [for each intersecting road]	Roadway Type at End Ramp Terminal
Median Type	AADT Year [for each intersecting road]	Interchange Type
Access Control		Ramp AADT
One/Two-Operations		Year of Ramp AADT
Number of Through Lanes		
AADT		
AADT Year		

Table 6 presents the MIRE FDE needed to satisfy MAP-21 reporting requirements (23 U.S.C. 148(h)(c)(i) and (ii)).

Table 6: MIRE FDE for MAP-21 Reporting Requirements

<b>Segments</b>	<b>Intersections</b>	<b>Interchange/Ramps</b>
Functional Class		Functional Class
Type of Governmental Ownership		Type of Governmental Ownership

## Rulemaking Analysis and Notices

**Executive Order 12866 (Regulatory Planning and Review), Executive Order 13563 (Improving Regulation and Regulatory Review), and DOT Regulatory Policies and Procedures**

The FHWA has determined that this proposed action is a significant regulatory action within the meaning of Executive Order 12866 and within the meaning of DOT regulatory policies and procedures due to the significant public interest in regulations related to traffic safety. It is anticipated that the economic impact of this rulemaking would not be economically significant within the meaning of Executive Order 12866 as discussed below. This action complies with Executive Orders 12866 and 13563 to improve regulation.

The FHWA has determined that this proposed rule would not result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of greater than \$100 million or more in any one year (2 U.S.C. 1532). Of the three requirements the Secretary was required to establish as a result of MAP-21 (i.e. MIRE FDE, SHSP update cycle, and HSIP Report Content and Schedule), FHWA believes that only the MIRE FDE would result in significant additional costs to the State DOTs.

The SAFETEA-LU and existing regulation currently require States to update their SHSP on a regular basis. This proposed rulemaking requires States to update their SHSP at least every 5 years. Thirty nine States updated their SHSP or had an SHSP update underway within a 5-year timeframe. A number of those States are on the third version of their SHSP. Of those States that have not delivered an SHSP update, they have an update planned or an update well underway. The FHWA has not estimated the cost of this proposal on States that update their SHSP less frequently than every 5 years. The

FHWA believes the cost of this proposal is small, but invites comments on whether it would result in substantial costs, and how those costs could be estimated.

The proposed rulemaking does not change the reporting schedule or frequency. There were only minimal changes to the HSIP report content, specifically the proposed requirement for States to report their annual safety performance targets in the HSIP report. The Transportation Performance Management: Safety NPRM being published concurrently with this NPRM accounts for the cost to develop the safety targets that will be reported in the existing HSIP report. The actual cost to report the targets is negligible and offset by the elimination of the transparency report requirement, which was a previously estimated burden of 200 hours per State.

Therefore, FHWA bases its cost-benefit analysis for the NPRM on the cost to collect, maintain, and use MIRE FDE only. The “MIRE Fundamental Data Elements Cost-Benefit Estimation”<sup>20</sup> report was developed to support the MAP-21 State Safety Data Systems guidance published on December 27, 2012, and is the basis for the NPRM cost-benefit analysis since the proposed MIRE FDE in this NPRM are based upon the recommended MIRE FDE in the guidance. The objective of this report was to estimate the potential cost to States in extending their statewide linear referencing system (LRS) and collecting the MIRE FDEs for the purposes of implementing the HSIP on all public roadways. The cost estimates developed as part of this report reflect the additional costs that a State would incur based on what is not being collected through the HPMS or not

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<sup>20</sup> “MIRE Fundamental Data Elements Cost-Benefit Estimation”, FHWA Report number: FHWA-SA-13-018, published March 2013 is available on the docket for this rulemaking and at the following Internet Web site: [http://safety.fhwa.dot.gov/rsdp/downloads/mire\\_fde\\_%20cbe\\_finalrpt\\_032913.pdf](http://safety.fhwa.dot.gov/rsdp/downloads/mire_fde_%20cbe_finalrpt_032913.pdf).



already being collected for other purposes. The cost estimate does not include the cost of analyzing the MIRE FDE and performance measure data. States are currently required to conduct safety analysis using the best available data. States meet this requirement using a variety of methods, but most commonly States use crash frequency and crash rate to identify and prioritize potential locations for safety improvement. The MIRE FDE enables States to use advanced safety analysis methods to conduct this analysis. The FHWA does not believe that States will incur any additional costs from analyzing or otherwise using the proposed MIRE FDE. The FHWA believes that States will use methods incorporating the proposed MIRE FDE in lieu of existing methods. In other words, FHWA believes that States will discontinue using existing methods and, in place of these methods, conduct new analyses using the proposed MIRE FDE that will more accurately estimate the expected number of crashes at a location. The FHWA believes the overall net effect would be no new costs to States from using the MIRE FDE. The FHWA requests comments on whether this understanding is accurate, or whether States will incur new costs from using the proposed MIRE FDE to identify safety problems and projects. The basic cost-estimation methodology is to apply estimated unit costs to the public road mileage reported by States to the FHWA HPMS.<sup>21</sup> The MIRE Fundamental Data Element Cost-Benefit Estimation Report documents the various unit-cost estimates and assumptions applied to each State's public road mileage to estimate the breakouts of total mileage by AADT range and by LRS coverage, the number of intersections and ramps, and the corresponding cost of the various components. The data used as the basis

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<sup>21</sup> HPMS, FHWA, <http://www.fhwa.dot.gov/policyinformation/statistics/2011/index.cfm#hm>.

for the MIRE FDE Cost-Benefit Estimation Report are available on the docket in a supplemental spreadsheet titled “MIRE FDE Analysis Supplemental Tables.”

With the passage of MAP-21, States will be required to collect data on all public roads, including non-Federal-aid roads. To initiate this process, States will need to develop a common statewide relational LRS on all public roads that is linkable with crash data, as required by 23 CFR 1.5 and described in recent FHWA guidance<sup>22</sup> issued on August 7, 2012. Based on this criteria, the report estimated that the cost of data collection for an average State is \$1,362,800 to complete the LRS and initial MIRE FDE collection efforts, \$66,600 for management and administration costs and \$2,896,100 for maintenance costs over the analysis period of 2013–2029 (in 2013 U.S. dollars). These are average net present value costs (at a 0.5 percent discount rate) on a per State basis. As such, across the 50 States and the District of Columbia, it is possible that the aggregate cost for initial data collection would be approximately \$69.5 million, and the annual maintenance cost would approach \$11.5 million. This equates to approximately \$225,000 on average for a State to maintain the data annually. Table 7 displays the total national annual cost of the proposed rule. Total costs are estimated to be \$228.8 million undiscounted, \$220.6 million discounted at 0.5 percent (the discount rate used in the MIRE FDE Cost-Benefit Estimation Report), \$185.8 million discounted at 3 percent, and \$146.1 million discounted at 7 percent.

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<sup>22</sup> A copy of “Guidance Memorandum on Geospatial Network for all Public Roads,” issued August 7, 2012, can be viewed at [www.regulations.gov](http://www.regulations.gov) under the docket number listed in the heading of this document.

Table 7: Total Estimated National Costs for MIRE FDE (2013-2029 Analysis Period)

Cost Components	Total National Costs			
	Undiscounted	0.5%	3.00%	7.00%
Cost of Section 924.17				
Linear Referencing System (LRS)	\$17,239,277	\$17,180,594	\$16,895,724	\$16,467,622
Initial Data Collection	\$53,172,638	\$52,319,704	\$48,367,784	\$42,980,809
Roadway Segments	\$37,941,135	\$37,332,527	\$34,512,650	\$30,668,794
Intersections	\$8,284,572	\$8,151,681	\$7,535,951	\$6,696,633
Interchange/Ramp locations	\$832,734	\$819,376	\$757,485	\$673,120
Volume Collection	\$6,114,197	\$6,016,120	\$5,561,698	\$4,942,262
Maintenance of data system	\$154,945,661	\$147,701,120	\$117,370,098	\$83,834,343
Management & administration of data system	\$3,449,812	\$3,394,474	\$3,138,075	\$2,788,571
Total Cost	\$228,807,387	\$220,595,892	\$185,771,683	\$146,071,346

The FHWA did not endeavor to estimate the difference in the cost between the safety projects that States would implement using the proposed MIRE FDE and the cost of the projects that States would implement using current data and methods which do not incorporate the proposed MIRE FDE. The FHWA welcomes comments to assist it in estimating such costs at the final rule stage.

The FHWA also welcomes comments from State DOTs and other interested members of the public on the economic, administrative, and operational impacts of this proposed rulemaking. Comments regarding specific burdens, impacts, and costs would assist FHWA in more fully appreciating and analyzing the impacts of these requirements. The FHWA also welcomes comments on the SHSP update cycle and related costs. In addition, FHWA seeks comments on whether agencies agree that the cost of collecting MIRE FDE as proposed in this NPRM is justified by the benefits, including the potential

for improving roadway safety, if additional data should be required or if data proposed in this NPRM should be eliminated, and on alternative approaches to implementing the MIRE FDE statutory requirement in a way that increases net benefits. The FHWA also seeks comments on how long it would take a State to collect and implement the MIRE FDE requirements and other methods, tools, and technologies that could be used to support MIRE FDE data collection efforts, or the assumptions used in the MIRE Fundamental Data Elements Cost-Benefit Estimation report. We encourage comments on all facets of this proposed rulemaking.

The FHWA initiated this proposed rulemaking to address the MAP-21 requirements for the Secretary to establish the MIRE FDE, SHSP update cycle, and reporting content and schedule. Furthermore, MAP-21 requires States to report on their safety performance in relation to the national safety performance measures in 23 U.S.C. 150(e). The collection and use of the MIRE FDE information would enhance States ability to:

- Develop quantifiable annual performance targets
- Develop a strategy for identifying and programming projects and activities that allow the State to meet the performance targets
- Conduct data analyses supporting the identification and evaluation of proposed countermeasures.

This proposed rulemaking will improve HSIP implementation efforts resulting in a significant impact on improving safety on our Nation's roads. Collecting the MIRE FDE data and integrating those data into the safety analysis process would support more

effective safety investment decisionmaking by improving an agency’s ability to locate problem areas with the greatest potential for safety improvement and apply the most appropriate countermeasures. More effective safety investments yield more lives saved and injuries avoided per dollar invested.

The benefits of this rule would be the monetized value of the crashes, fatalities, serious injuries, and property damage avoided by the projects identified and implemented using the proposed MIRE FDE minus the foregone monetized value of the crashes, fatalities, serious injuries, and property damage avoided by the projects identified and implemented using current data and methods used by States to allocate safety resources. The FHWA has not endeavored to estimate the benefits of this rule in this way, but welcomes comments on how it could estimate such benefits at the final rule stage. Instead, FHWA conducted a break-even analysis. The “MIRE Fundamental Data Elements Cost-Benefit Estimation”<sup>23</sup> report estimated the reduction in fatalities and injuries that would be needed to exceed 1:1 and 2:1 ratios of benefits to costs. Table 8 summarizes these needed benefits. The injury costs used in the report reflect the average injury costs based on the national distribution of injuries in the General Estimate System using a Maximum Abbreviated Injury Scale.

Table 8: Estimated Benefits Needed to Achieve Cost-Benefit Ratios of 1:1 and 2:1

Benefits	Number of Lives Saved/Injuries Avoided Nationally			
	Undiscounted	0.5%	3.00%	7.00%
Benefit/Cost Ratio of 1:1				

<sup>23</sup> “MIRE Fundamental Data Elements Cost-Benefit Estimation,” FHWA Report number: FHWA-SA-13-018, published March 2013 is available on the docket for this rulemaking and at the following Internet Web site: [http://safety.fhwa.dot.gov/rsdp/downloads/mire\\_fde\\_%20cbe\\_finalrpt\\_032913.pdf](http://safety.fhwa.dot.gov/rsdp/downloads/mire_fde_%20cbe_finalrpt_032913.pdf). The document found at this link can also be found in the docket at <http://www.regulations.gov>.

# of lives saved (fatalities)	19	19	21	23
# of injuries avoided	1246	1263	1353	1517
<b>Benefit/Cost Ratio of 2:1</b>				
# of lives saved (fatalities)	38	39	42	47
# of injuries avoided	2493	2527	2706	3034

Using the 2012 comprehensive cost of a fatality of \$9,100,000 and \$107,438 for an injury,<sup>24</sup> results in an estimated reduction of 0.38 fatalities and 24.77 injuries per average State over the 2013–2029 analysis period would be needed to result in a benefit/cost ratio greater than 1:1. To achieve a benefit-cost ratio of 2:1, fatalities would need to be reduced by 0.76 and injuries by 49.54 per average State over the same analysis period.

One study on the effectiveness of the HSIP found:<sup>25</sup>

The magnitude of States’ fatal crash reduction was highly associated with the years of available crash data, prioritizing method, and use of roadway inventory data. Moreover, States that prioritized hazardous sites by using more detailed roadway inventory data and the empirical Bayes method had the greatest reductions; all of those States relied heavily on the quality of crash data system.”

For example, this study cites Colorado’s safety improvements, noting “Deployment of advanced methods on all projects and acquisition of high-quality data may explain why Colorado outperformed the rest of the country in reduction of fatal

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<sup>24</sup> Office of the Secretary of Transportation, Memorandum on Guidance on Treatment of the Economic Value of a Statistical Life in U.S. Department of Transportation Analyses, February 28, 2013. <http://www.dot.gov/regulations/economic-values-used-in-analysis>.

<sup>25</sup> Wu, K.-F., Himes, S.C., and Pietrucha, M.T., “Evaluation of Effectiveness of the Federal Highway Safety Improvement Program,” Transportation Research Record, Vol. 2318, pp. 23-34, 2013.

crashes.”<sup>26</sup> Illinois was also high on this study’s list of States with the highest percentage reduction in fatalities. In a case study of Illinois’ use of AASHTO Highway Safety Manual methods, an Illinois DOT official noted that use of these methods “requires additional roadway data, but has improved the sophistication of safety analyses in Illinois resulting in better decisions to allocate limited safety resources.”<sup>27</sup> Another case study of Ohio’s adoption of a tool to apply the roadway safety management methods described in the AASHTO Highway Safety Manual concluded, “In Ohio, one of the benefits of applying various HSM screening methods was identifying ways to overcome some of the limitations of existing practices. For example, the previous mainframe methodology typically over-emphasized urban “sites of promise” – locations identified for further investigation and potential countermeasure implementation. These locations were usually in the largest urban areas, often with a high frequency of crashes that were low in severity. Now, several screening methods can be used in the network screening process resulting in greater identification of rural corridors and projects. This identification enables Ohio’s safety program to address more factors contributing to fatal and injury crashes across the State, instead of being limited to high-crash locations in urban areas, where crashes often result in minor or no injuries.”<sup>28</sup> Another document quantified these benefits, indicating that the number of fatalities per identified mile is 67 percent higher, the number of serious injuries per mile is 151 percent higher, and the number of total

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<sup>26</sup> Ibid.

<sup>27</sup> Highway Safety Manual Case Study 4: Development of Safety Performance Functions for Network Screening in Illinois. [http://safety.fhwa.dot.gov/hsm/casestudies/il\\_cstd.cfm](http://safety.fhwa.dot.gov/hsm/casestudies/il_cstd.cfm).

<sup>28</sup> Highway Safety Manual Case Study 2: Implementing a New Roadway Safety Management Process with SafetyAnalyst in Ohio. [http://safety.fhwa.dot.gov/hsm/casestudies/oh\\_cstd.cfm](http://safety.fhwa.dot.gov/hsm/casestudies/oh_cstd.cfm).

crashes is 105 percent higher with these new methods than with their former methods.<sup>29</sup>

In summary, all three States experienced benefits to the effectiveness of safety investment decisionmaking through the use of methods that included roadway data akin to the MIRE FDE and crash data in their highway safety analyses.

In 2010, 32,885 people died in motor vehicle traffic crashes in the United States, and an estimated 2.24 million people were injured.<sup>30,31</sup> The decrease in fatalities needed to achieve a 1:1 cost-benefit ratio represent a 0.4 percent reduction of annual fatalities using 2010 statistics. The experiences to date in States that are already collecting and using roadway data comparable to the MIRE FDE suggests there is a very high likelihood that the benefits of collecting and using the proposed MIRE FDE will outweigh the costs. We believe that the proposed MIRE FDE in combination with crash data will support more cost-effective safety investment decisions and ultimately yield greater reductions in fatalities and serious injuries per dollar invested.

### **Regulatory Flexibility Act**

In compliance with the Regulatory Flexibility Act (RFA) (Pub. L. 96–354, 5 U.S.C. 601–612), FHWA has evaluated the effects of these changes on small entities and anticipates that this proposed rule would not have a significant economic impact on a substantial number of small entities. The proposed rulemaking addresses the HSIP. As such, it affects only States, and States are not included in the definition of small entity set

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<sup>29</sup> Hughes, J. and Council, F.M., “How Good Data Lead to Better Safety Decisions,” *ITE Journal*, April 2012.

<sup>30</sup> National Highway Traffic Safety Administration - Fatality Analysis Reporting System: can be accessed at the following Internet Web site: <http://www.nhtsa.gov/FARS>.

<sup>31</sup> National Highway Traffic Safety Administration – National Automotive Sampling System (NASS) General Estimates System (GES): can be accessed at the following Internet Web site: <http://www.nhtsa.gov/NASS>.



forth in 5 U.S.C. 601. Therefore, the RFA does not apply, and I hereby certify that the proposed action would not have a significant economic impact on a substantial number of small entities.

### **Unfunded Mandates Reform Act of 1995**

The FHWA has evaluated this proposed rule for unfunded mandates as defined by the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, 109 Stat. 48, March 22, 1995). As part of this evaluation, FHWA has determined that this proposed rule would not result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of greater than \$100 million or more in any one year (2 U.S.C. 1532). The FHWA bases its analysis on the “MIRE Fundamental Data Elements Cost-Benefit Estimation” Report.<sup>32</sup> The objective of this report was to estimate the potential cost to States in developing a statewide LRS and collecting the MIRE FDEs for the purposes of implementing the HSIP on all public roadways. The cost estimates developed as part of this report reflect the additional costs that a State would incur based on what is not being collected through the HPMS or not already being collected through other efforts. The funds used to establish a data collection system, collect initial data, and maintain annual data collection are reimbursable to the States through the HSIP program.

Further, in compliance with the Unfunded Mandates Reform Act of 1995, FHWA will evaluate any regulatory action that might be proposed in subsequent stages of the proceeding to assess the effects on State, local, and tribal governments and the private

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<sup>32</sup> “MIRE Fundamental Data Elements Cost-Benefit Estimation”, FHWA Report number: FHWA-SA-13-018, published March 2013 is available on the docket for this rulemaking and at the following Internet Web site: [http://safety.fhwa.dot.gov/rsdp/downloads/mire\\_fde\\_%20cbe\\_finalrpt\\_032913.pdf](http://safety.fhwa.dot.gov/rsdp/downloads/mire_fde_%20cbe_finalrpt_032913.pdf).

sector. Additionally, the definition of “Federal Mandate” in the Unfunded Mandate Reform Act excludes financial assistance of the type in which State, local, or tribal governments have authority to adjust their participation in the program in accordance with changes made in the program by the Federal Government. The Federal-aid highway program permits this type of flexibility.

#### **Executive Order 13132 (Federalism)**

This proposed action has been analyzed in accordance with the principles and criteria contained in Executive Order 13132 dated August 4, 1999. The FHWA has determined that this proposed action would not have sufficient federalism implications to warrant the preparation of a federalism assessment. The FHWA has also determined that this proposed rulemaking would not preempt any State law or State regulation or affect the States’ ability to discharge traditional State governmental functions.

#### **Executive Order 13175 (Tribal Consultation)**

The FHWA has analyzed this proposed action under Executive Order 13175, dated November 6, 2000, and believes that it would not have substantial direct effects on one or more Indian tribes; would not impose substantial direct compliance costs on Indian tribal governments; and would not preempt tribal law. Therefore, a tribal summary impact statement is not required.

#### **Executive Order 13211 (Energy Effects)**

The FHWA has analyzed this proposed action under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. We have determined that it is not a significant energy action under that order

because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Therefore, a Statement of Energy Effects under Executive Order 13211 is not required.

**Executive Order 12372 (Intergovernmental Review) Catalog of Federal Domestic Assistance program Number 20.205, Highway Planning and Construction.**

The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.

**Paperwork Reduction Act**

Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501, *et seq.*), Federal agencies must obtain approval from the Office of Management and Budget (OMB) prior to conducting or sponsoring a “collection of information” as defined by the PRA. The FHWA currently has OMB approval under “Highway Safety Improvement Programs” (OMB Control No: 2125-0025) to collect the information required by State’s annual HSIP reports. The FHWA desires to concurrently update this request to reflect MAP-21 requirements as proposed in this NPRM.<sup>33</sup> The FHWA invites comments about our intention to request OMB approval for a new information collection to include the additional components required in this NPRM to reflect MAP-21 requirements described in the Supplementary Information below. Any action that might be contemplated in subsequent phases of this proceeding will be analyzed for the purpose of the PRA for its impact to this current information collection. The FHWA will submit the proposed

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<sup>33</sup> This information collection request (ICR) can be viewed at the following Internet Web site: [http://www.reginfo.gov/public/do/PRAViewICR?ref\\_nbr=201308-2125-002](http://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=201308-2125-002).

collections of information to OMB for review and approval at the time the NPRM is issued and, accordingly, seeks comments.

#### *Supplementary Information*

The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. In accordance with 23 U.S.C. 148(h) and 23 U.S.C. 130(g), Railway-Highway Crossings Program, FHWA proposes in this NPRM to collect a report describing progress being made to implement the HSIP and a report describing progress being made to implement railway-highway grade crossing improvements. The FHWA proposes that the State DOTs continue to annually produce and submit these reports to FHWA by August 31. The FHWA proposes the HSIP report to (1) describe the structure of the HSIP; (2) describes the progress in implementing HSIP projects; (3) describes progress in achieving safety performance targets; and (4) assesses the effectiveness of the improvements. The States currently report this information, with the exception of the proposed requirement that State's document the established safety performance targets for the following calendar year in their annual HSIP report (that will be developed as per the Transportation Performance Management: Safety NPRM being published concurrently with this NPRM). Similarly, FHWA proposes the Railway-Highway Crossing Program Report continue to describe progress being made to implement railway-highway grade crossing improvements in accordance with 23 U.S.C. 130(g), and the effectiveness of these improvements.

The information contained in the annual HSIP reports provides FHWA with a means for monitoring the effectiveness of these programs and may be used by Congress

for determining the future HSIP program structure and funding levels. In addition, FHWA uses the information collected as part of the HSIP reports to prepare an HSIP National Summary Report,<sup>34</sup> which summarizes the number of HSIP projects by type and cost. The Railway-Highway Crossing Program Reports are used by FHWA to produce and submit biennial reports to Congress.

To be able to produce these reports, State DOTs must have safety data and analysis systems capable of identifying and determining the relative severity of hazardous highway locations on all public roads, based on both crash experience and crash potential, as well as determining the effectiveness of highway safety improvement projects. As discussed in this NPRM, FHWA proposes to require States to collect and use a subset of MIRE as part of their safety data system for this purpose as mandated under 23 U.S.C. 148(f)(2).

Section 148(h)(3), of title 23, U.S.C., requires the Secretary to make the State's HSIP reports<sup>35</sup> and SHSP<sup>36</sup> available on the Department's Web site. The FHWA proposes States use the online reporting tool to support the annual HSIP reporting process. Additional information is available on the Office of Safety Web site at: <http://safety.fhwa.dot.gov/hsip/resources/onrpttool/>. Reporting into the online reporting tool meets all report requirements and DOT Web site compatibility requirements.

A burden estimate for the HSIP Reports and MIRE FDE is summarized below in Table 5. The HSIP Reports burden represents the annual burden per each collection

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<sup>34</sup> [http://safety.fhwa.dot.gov/hsip/reports/nsbrpt\\_2009\\_2012.cfm](http://safety.fhwa.dot.gov/hsip/reports/nsbrpt_2009_2012.cfm).

<sup>35</sup> <http://safety.fhwa.dot.gov/hsip/reports/>.

<sup>36</sup> [http://safety.fhwa.dot.gov/hsip/shsp/state\\_links.cfm](http://safety.fhwa.dot.gov/hsip/shsp/state_links.cfm).

cycle; whereas, the MIRE FDE burden represents the initial data collection and maintenance burdens over the 2013-2029 analysis period, consistent with the MIRE FDE Cost-Benefit Estimation Report. This report calculated the MIRE FDE costs as a dollar figure. To turn this into an equivalent hourly burden, we took the total costs (including technology and data collection by vendors) and turned them into labor hours (\$55/hour, including overhead).

Table 5: Burden Estimate for HSIP Reports and MIRE FDE Information Collection

	HSIP Reports	MIRE FDE (Initial collection spread over 5 years)	MIRE FDE (maintenance for 16 years)
Respondents	51 State Transportation Departments, including the District of Columbia.		
Frequency	Annually, by August 31 <sup>st</sup>	Once, within 5 years of HSIP final rule publication	Annual
Estimated Average Burden per Response	250 hours	25,987 hours*	52,656 hours**
Estimated total burden hours	12,750 hours	1,325,360 hours*	2,685,475 hours**

\*Over 5 years of data collection

\*\*Over 16 year (2013 - 2029) analysis period (from the MIRE FDE Cost-Benefit Estimation Report)

*Comments Invited:* You are asked to comment on any aspect of this information collection, including: (1) whether the proposed collection is necessary for FHWA's performance; (2) the accuracy of the estimated burdens; (3) ways for FHWA to enhance the quality, usefulness, and clarity of the collected information; and (4) ways that the burden could be minimized, including the use of electronic technology, without reducing the quality of the collected information. The agency will summarize and/or include your comments in the request for OMB's clearance of this information collection.

**Executive Order 12988 (Civil Justice Reform)**

This proposed action meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

**Executive Order 13045 (Protection of Children)**

The FHWA has analyzed this proposed action under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. The FHWA certifies that this proposed action would not concern an environmental risk to health or safety that might disproportionately affect children.

**Executive Order 12630 (Taking of Private Property)**

The FHWA does not anticipate that this proposed action would affect a taking of private property or otherwise have taking implications under Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

**National Environmental Policy Act**

The agency has analyzed this proposed action for the purpose of the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4347) and has determined that it would not have any effect on the quality of the environment and meets the criteria for the categorical exclusion at 23 CFR 771.117(c)(20).

**Executive Order 12898 (Environmental Justice)**

Executive Order 12898 requires that each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its

programs, policies, and activities on minorities and low-income populations. The FHWA has determined that this rule does not raise any environmental justice issues.

### **Regulation Identification Number**

A regulation identification number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross reference this action with the Unified Agenda.

### **List of Subjects in 23 CFR Part 924**

Highway safety, Highways and roads, Motor Vehicles, Railroads, Railroad safety, Safety, Transportation

Issued on: March 21, 2014.

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Gregory G. Nadeau,  
Deputy Administrator,  
FHWA.

In consideration of the foregoing, FHWA proposes to revise title 23, Code of Federal Regulations part 924 as follows:

### **PART 924—HIGHWAY SAFETY IMPROVEMENT PROGRAM**



**Sec.**

- 924.1 Purpose.
- 924.3 Definitions.
- 924.5 Policy.
- 924.7 Program structure.
- 924.9 Planning.
- 924.11 Implementation.
- 924.13 Evaluation.
- 924.15 Reporting.
- 924.17 MIRE fundamental data elements

**Authority:** 23 U.S.C. 104(b)(3), 130, 148, and 315; 49 CFR 1.85.

**§ 924.1 Purpose.**

The purpose of this regulation is to prescribe requirements for the development, implementation, and evaluation of a highway safety improvement program (HSIP) in each State.

**§ 924.3 Definitions.**

Unless otherwise specified in this part, the definitions in 23 U.S.C. 101(a) are applicable to this part. In addition, the following definitions apply:

*Hazard index formula* means any safety or crash prediction formula used for determining the relative likelihood of hazardous conditions at railway-highway grade crossings, taking into consideration weighted factors, and severity of crashes.

*Highway* means,

- (1) A road, street, or parkway and all associated elements such as a right-of-way, bridge, railroad-highway crossing, tunnel, drainage structure, sign, guardrail, protective structure, etc.;

(2) A roadway facility as may be required by the United States Customs and Immigration Services in connection with the operation of an international bridge or tunnel; and

(3) A facility that serves pedestrians and bicyclists pursuant to 23 U.S.C. 148(e)(1)(A).

*Highway Safety Improvement Program (HSIP)* means a State safety program to implement the provisions of 23 U.S.C. 130 and 148, including the development of a Strategic Highway Safety Plan (SHSP), Railway- Highway Crossings Program and program of highway safety improvement projects.

*Highway safety improvement project* means strategies, activities, or projects on a public road that are consistent with a State strategic highway safety plan (SHSP) and that either corrects or improves a hazardous road segment location or feature, or addresses a highway safety problem. Highway safety improvement projects can include both infrastructure and non-infrastructure projects. Examples of projects are described in 23 U.S.C. 148(a).

*MIRE Fundamental data elements* means the minimal subset of the roadway and traffic data elements established in FHWA's Model Inventory of Roadway Elements (MIRE) that are used to support a State's data-driven safety program.

*Public grade crossing* means a railway-highway grade crossing where the roadway (including associated sidewalks, pathways and shared use paths) is under the jurisdiction of and maintained by a public authority and open to public travel, including non-motorized users. All roadway approaches must be under the

jurisdiction of a public roadway authority, and no roadway approach may be on private property.

*Public road* means any highway, road, or street under the jurisdiction of and maintained by a public authority and open to public travel, including non-State-owned public roads and roads on tribal land.

*Reporting year* means a one-year period defined by the State. It may be the Federal fiscal year, State fiscal year or calendar year, unless noted otherwise in this section.

*Road safety audit* means a formal safety performance examination of an existing or future road or intersection by an independent multidisciplinary audit team.

*Safety data* includes, but is not limited to, crash, roadway, and traffic data on all public roads. For railway-highway grade crossings, safety data also includes the characteristics of highway and train traffic, licensing, and vehicle data.

*Safety stakeholder* means, but is not limited to,

- (1) A highway safety representative of the Governor of the State;
- (2) Regional transportation planning organizations and metropolitan planning organizations, if any;
- (3) Representatives of major modes of transportation;
- (4) State and local traffic enforcement officials;
- (5) A highway-rail grade crossing safety representative of the Governor of the State;

- (6) Representatives conducting a motor carrier safety program under section 31102, 31106, or 31309 of title 49;
- (8) Motor vehicle administration agencies;
- (9) County transportation officials;
- (10) State representatives of non-motorized users; and
- (11) Other Federal, State, tribal and local safety stakeholders.

*Serious injury* means “suspected serious injury” as defined in the Model Minimum Uniform Crash Criteria (MMUCC), latest edition.

*Spot safety improvement* means an improvement or set of improvements that is implemented at a specific location on the basis of location-specific crash experience or other data-driven means.

*Strategic highway safety plan (SHSP)* means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

*Systemic safety improvement* means an improvement or set of improvements that is widely implemented based on high-risk roadway features that are correlated with particular severe crash types.

#### **§ 924.5 Policy.**

- (a) Each State shall develop, implement, and evaluate on an annual basis a HSIP that has the objective to significantly reduce fatalities and serious injuries resulting from crashes on all public roads.

(b) HSIP funds shall be used for highway safety improvement projects that maximize opportunities to advance safety consistent with the State's SHSP and have the greatest potential to reduce the State's fatality and serious injuries. Prior to approving the use of HSIP funds for non-infrastructure related safety projects, FHWA will assess the extent to which other eligible Federal funds provided to the State for non-infrastructure safety programs (including but not limited to those administered by the National Highway Traffic Safety Administration and Federal Motor Carrier Safety Administration) are programmed.

(c) Safety improvements should also be incorporated into projects funded by other Federal-aid programs, such as the National Highway Performance Program (NHPP) and the Surface Transportation Program (STP). Safety improvements that are provided as part of a broader Federal-aid project should be funded from the same source as the broader project.

(d) Eligibility for Federal funding of projects for traffic control devices under this part is subject to a State or local/tribal jurisdiction's substantial conformance with the National MUTCD or FHWA-approved State MUTCDs and supplements in accordance with part 655, subpart F, of this title.

**§ 924.7 Program structure.**

(a) The HSIP shall include:

- (1) A Strategic Highway Safety Plan;
- (2) A Railway-Highway Crossing Program; and
- (3) A program of highway safety improvement projects.

(b) The HSIP shall include separate processes for the planning, implementation, and evaluation of the HSIP components described in section 924.7(a) for all public roads in the State. These processes shall be developed by the States in cooperation with the FHWA Division Administrator in accordance with this section and the requirements of 23 U.S.C. 148. Where appropriate, the processes shall be developed in consultation with other safety stakeholders and officials of the various units of local and tribal governments.

**§ 924.9 Planning.**

(a) The HSIP planning process shall incorporate:

(1) A process for collecting and maintaining safety data on all public roads.

Roadway data shall include, at a minimum, the MIRE Fundamental Data Elements as established in section 924.17. Railway-highway grade crossing data shall include all fields from the US DOT National Highway-Rail Crossing Inventory.

(2) A process for advancing the State's capabilities for safety data collection by improving the timeliness, accuracy, completeness, uniformity, integration, and accessibility of their safety data on all public roads, resulting in improved analysis capabilities.

(3) A process for updating the SHSP that identifies and analyzes highway safety problems and opportunities in accordance with 23 U.S.C.148. An SHSP update shall:

- (i) Be completed no later than five years from the date of the previous approved version;
- (ii) Be developed by the State Department of Transportation in consultation with safety stakeholders;
- (iii) Provide a detailed description of the update process, as approved by the FHWA Division Administrator;
- (iv) Be approved by the Governor of the State or a responsible State agency official that is delegated by the Governor;
- (v) Adopt performance-based goals that:
  - (A) Are consistent with performance measures established by FHWA in accordance with 23 U.S.C. 150; and
  - (B) Are coordinated with other State highway safety programs;
- (vi) Analyze and make effective use of State, regional, local and tribal safety data and address safety problems and opportunities on all public roads and for all road users;
- (vii) Identify key emphasis areas and strategies that significantly reduce highway fatalities and serious injuries, focus resources on areas of greatest need, and possess the greatest potential for a high rate of return on safety investments;
- (viii) Address engineering, management, operations, education, enforcement, and emergency services elements of highway safety as key features when determining SHSP strategies;

- (ix) Consider the results of State, regional, local, and tribal transportation and highway safety planning processes and demonstrate mutual consultation among partners in the development of transportation safety plans;
  - (x) Provide strategic direction for other State and local/tribal transportation plans, such as the HSIP, the Highway Safety Plan, and the Commercial Vehicle Safety Plan; and
  - (xi) Describe the process and potential resources for implementing strategies in the emphasis areas.
- (4) A process for analyzing safety data to:
- (i) Develop a program of highway safety improvement projects, in accordance with 23 U.S.C. 148(c)(2), to reduce fatal and serious injuries resulting from crashes on all public roads through the implementation of a comprehensive program of systemic and spot safety improvement projects.
  - (ii) Develop a Railway-Highway Crossings program that:
    - (A) Considers the relative hazard of public railway-highway grade crossings based on a hazard index formula;
    - (B) Includes onsite inspection of public grade crossings;
    - (C) Results in a program of highway safety improvement projects at railway-highway grade crossings giving special emphasis to the statutory requirement that all public crossings be provided with standard signing and markings.



(5) A process for conducting engineering studies (such as road safety audits and other safety assessments or reviews) to develop highway safety improvement projects.

(6) A process for establishing priorities for implementing highway safety improvement projects including:

- (i) The potential reduction in the number and rate of fatalities and serious injuries;
- (ii) The cost effectiveness of the projects and the resources available; and
- (iii) The priorities in the SHSP.

(b) The planning process of the HSIP may be financed with funds made available through 23 U.S.C. 104(b)(3), and 505 and, where applicable in metropolitan planning areas, through 23 U.S.C. 104(d). The eligible use of the program funding categories listed for HSIP planning efforts is subject to that program's eligibility requirements and cost allocation procedures as per 2 CFR 225 and 49 CFR 18.22.

(c) Highway safety improvement projects, including non-infrastructure safety projects, to be funded under 23 U.S.C. 104(b)(3), shall be carried out as part of the Statewide and Metropolitan Transportation Planning Process consistent with the requirements of 23 U.S.C. 134 and 135, and 23 CFR part 450. States shall be able to distinguish between infrastructure and non-infrastructure projects in the STIP.

#### **§ 924.11 Implementation.**

(a) The HSIP shall be implemented in accordance with the requirements of section 924.9 of this Part.

(b) States shall incorporate an implementation plan for collecting MIRE fundamental data elements in their State's Traffic Records Strategic Plan by July 1, 2015. States shall complete collection of the MIRE fundamental data elements on all public roads by September 30, 2020.

(c) The SHSP shall include or be accompanied by actions that address how the SHSP emphasis area strategies will be implemented.

(d) Funds set-aside for the Railway-Highway Crossings Program under 23 U.S.C. 130 shall be used to implement railway-highway grade crossing safety projects on any public road. If a State demonstrates to the satisfaction of the FHWA Division Administrator that the State has met its needs for the installation of protective devices at railway-highway grade crossings, the State may use funds made available under 23 U.S.C. 130 for other types of highway safety improvement projects pursuant to the Special Rule at 23 U.S.C. 130(e)(2).

(e) Highway safety improvement projects may also be implemented with other funds apportioned under 23 U.S.C. 104(b) subject to the eligibility requirements applicable to each program.

(f) Award of contracts for highway safety improvement projects shall be in accordance with 23 CFR part 635 and part 636, where applicable, for highway construction projects, 23 CFR part 172 for engineering and design services contracts related to highway construction projects, or 49 CFR part 18 for non-highway construction projects.

(g) Except as provided in 23 U.S.C. 120 and 130, the Federal share of the cost of a highway safety improvement project carried out with funds apportioned to a State under 23 U.S.C. 104(b)(3) shall be 90 percent.

**§ 924.13 Evaluation.**

(a) The HSIP evaluation process shall include:

(1) A process to analyze and assess the results achieved by highway safety improvement projects, in terms of reducing the number and rate of fatalities and serious injuries contributing towards the performance targets established as per 23 U.S.C. 150.

(2) An evaluation of the SHSP as part of the regularly recurring update process to:

- (i) Confirm the validity of the emphasis areas and strategies based on analysis of current safety data; and
- (ii) Identify issues related to the SHSP's process, implementation and progress that should be considered during each subsequent SHSP update.

(b) The information resulting from 23 CFR 924.13(a)(1) shall be used:

- (1) To update safety data used in the planning process in accordance with 23 CFR 924.9;
- (2) For setting priorities for highway safety improvement projects;
- (3) For assessing the overall effectiveness of the HSIP; and
- (4) For reporting required by 23 CFR 924.15.

(c) The evaluation process may be financed with funds made available under 23 U.S.C. 104(b) (3), and 505, and for metropolitan planning areas, 23 U.S.C. 104(d). The eligible

use of the program funding categories listed for HSIP evaluation efforts is subject to that program's eligibility requirements and cost allocation procedures as per 2 CFR 225 and 49 CFR 18.22.

**§ 924.15 Reporting.**

(a) For the period of the previous reporting year, each State shall submit to the FHWA Division Administrator, via FHWA's HSIP online reporting tool, no later than August 31 of each year, the following reports related to the HSIP in accordance with 23 U.S.C. 148(h) and 130(g):

(1) A report describing the progress being made to implement the HSIP that:

(i) Describes the structure of the HSIP: This section shall describe how HSIP funds are administered in the State and include a summary of the methodology used to develop the programs and projects being implemented under the HSIP on all public roads.

(ii) Describes the progress in implementing highway safety improvement projects: This section shall:

(A) Compare the funds programmed in the STIP for highway safety improvement projects and those obligated during the reporting year; and

(B) Provide a list of highway safety improvement projects that were obligated during the reporting year, including non-infrastructure projects. Each project listed shall identify how it relates to the State SHSP.

(iii) Describes the progress in achieving safety performance targets: This section shall provide an overview of general highway safety trends, document the established safety performance targets for the following calendar year and present information related to the applicability of the special rules defined in 23 U.S.C. 148(g). General highway safety trends and safety performance targets shall be presented by number and rate of fatalities and serious injuries on all public roads by calendar year. To the maximum extent practicable, general highway safety trends shall also be presented by functional classification and roadway ownership.

(iv) Assesses the effectiveness of the improvements: This section shall describe the effectiveness of groupings or similar types of highway safety improvement projects previously implemented under the HSIP.

(v) Is compatible with the requirements of 29 U.S.C. 794(d), Section 508 of the Rehabilitation Act.

(2) A report describing progress being made to implement railway-highway grade crossing improvements in accordance with 23 U.S.C. 130(g), and the effectiveness of these improvements.

(b) The preparation of the State's annual reports may be financed with funds made available through 23 U.S.C. 104(b)(3).

#### **§ 924.17 MIRE Fundamental Data Elements.**

Fundamental data elements for the collection of roadway data

Table 1 – MIRE Fundamental Data Elements for Roads with AADT  $\geq$  400 Vehicles per Day

<b>MIRE Name (MIRE Number)^</b>	
<b>Roadway Segment</b>	<b>Intersection</b>
Segment Identifier (12)	Unique Junction Identifier (120)
Route Number (8)*	Location Identifier for Road 1 Crossing Point (122)
Route/street Name (9)*	Location Identifier for Road 2 Crossing Point (123)
Federal Aid/ Route Type (21)*	Intersection/Junction Geometry (126)
Rural/Urban Designation (20)*	Intersection/Junction Traffic Control (131)
Surface Type (23)*	AADT (79) [for Each Intersecting Road]
Begin Point Segment Descriptor (10)*	AADT Year (80) [for Each Intersecting Road]
End Point Segment Descriptor (11)*	
Segment Length (13)*	
Direction of Inventory (18)	Unique Approach Identifier (139)
Functional Class (19)*	
Median Type (54)	
Access Control (22)*	
One/Two-Way Operations (91)*	<b>Interchange/Ramp</b>
Number of Through Lanes (31)*	Unique Interchange Identifier (178)
Average Annual Daily Traffic (79)*	Location Identifier for Roadway at Beginning Ramp Terminal (197)
AADT Year (80)*	Location Identifier for Roadway at Ending Ramp Terminal (201)
Type of Governmental Ownership (4)*	Ramp Length (187)
	Roadway Type at Beginning Ramp Terminal (195)
	Roadway Type at Ending Ramp Terminal (199)
	Interchange Type (182)
	Ramp AADT (191)*
	Year of Ramp AADT (192)*
	Functional Class (19)*
	Type of Governmental Ownership (4)*

^*Model Inventory of Roadway Elements—MIRE, Version 1.0*, Report No. FHWA-SA-10-018, October 2010, [http://www.mireinfo.org/collateral/mire\\_report.pdf](http://www.mireinfo.org/collateral/mire_report.pdf).

\*Highway Performance Monitoring System full extent elements are required on all Federal-aid highways and ramps located within grade-separated interchanges, i.e., National Highway System (NHS) and all functional systems excluding rural minor collectors and locals.

Table 2– MIRE Fundamental Data Elements for Roads with AADT < 400 Vehicles per Day

<b>MIRE Name (MIRE Number)^</b>	
<b>Roadway Segment</b>	<b>Intersection</b>
Segment Identifier (12)	Unique Junction Identifier (120)

Functional Class (19)*	Intersection/Junction Geometry (126)
Surface Type (23)*	Location Identifier for Road 1 Crossing Point (122)
Type of Governmental Ownership (4)*	Location Identifier for Road 2 Crossing Point (123)
Number of Through Lanes (31)*	Intersection/Junction Traffic Control (131)
Average Annual Daily Traffic (79)*	
Begin Point Segment Descriptor (10)*	
End Point Segment Descriptor (11)*	
Rural/Urban Designation (20)*	

^*Model Inventory of Roadway Elements—MIRE, Version 1.0*, Report No. FHWA-SA-10-018, October 2010, [http://www.mireinfo.org/collateral/mire\\_report.pdf](http://www.mireinfo.org/collateral/mire_report.pdf).

\*Highway Performance Monitoring System full extent elements are required on all Federal-aid highways and ramps located within grade-separated interchanges, i.e., National Highway System (NHS) and all functional systems excluding rural minor collectors and locals.

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